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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/810,233	03/19/2001	Katsuyuki Morii	108971	5581

25944 7590 04/07/2004

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EXAMINER

LEURIG, SHARLENE L

ART UNIT PAPER NUMBER

2879

DATE MAILED: 04/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/810,233	MORII, KATSUYUKI	
	Examiner	Art Unit	
	Sharlene Leurig	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 9-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-11 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>082901</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-8, drawn to an organic electroluminescent device, classified in class 313, subclass 504.
  - II. Claims 9-11, drawn to a method of manufacturing an organic electroluminescent device, classified in class 445, subclass 24.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the method of manufacture can be used to make an OEL with an opaque cathode rather than a light-transmissive cathode.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.
5. During a telephone conversation with Eric Morehouse on March 25, 2004 a provisional election was made with traverse to prosecute the invention of Group I,

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claims 1-8. Affirmation of this election must be made by applicant in replying to this Office action. Claims 9-11 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

### ***Claim Objections***

6. Claim 1 is objected to because of the following informalities: the claim contains a grammatical error in line 8. The phrase "the anode" does not appear to fit grammatically within the line. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 3, 4 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Guha et al. (5,739,545).

Regarding claim 1, Guha discloses an organic electroluminescent device comprising a substrate (Figure 3, element 52), an anode (54), a light-emitting layer formed of an organic material (56), and a cathode including a first cathode (64) formed of a material having a work function of 3.0 eV or less and a second cathode (68) formed of a material having a higher work function than that of the first cathode. The first and second cathode are sequentially stacked in that order from the organic light-emitting

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layer on the opposite side of the anode, and a total thickness of the first and second cathodes is 100 Angstroms. Light is emitted to an exterior of the device via at least the cathode.

Regarding claim 3, the first cathode includes calcium.

Regarding claim 4, the thickness of the first cathode is equal to 50 Angstroms.

Regarding claim 6, the second cathode includes aluminum.

### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Guha et al. (5,739,545) in view of Strite (6,023,073).

Guha discloses an OEL having a transparent cathode and further discloses that OEL devices often have hermetic seals to protect them from moisture (column 2, lines 49-50).

Guha fails to exemplify an OEL having a transparent cathode with a transparent sealing layer formed of a light transmissive material.

Strite teaches an OEL device having a transparent cathode topped by a sealing layer formed of a light transmissive material (Figure 10).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the OEL of Guha by providing a light transmissive sealing layer above the cathode in order to protect the cathode from damaging elements while also allowing light to be emitted from the device, as taught by Strite.

11. Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guha et al. (5,739,545).

Guha discloses an OEL having a first cathode of calcium and a second cathode of aluminum forming a transparent cathode. The total thickness of the first and second cathodes is 100 Angstroms and the thickness of each cathode layer is disclosed as 50 Angstroms in Figure 3. Guha further discloses that the thickness of the cathode layer can determine the degree of transparency of the cathode (column 2, lines 62-67) and specifically discloses that the thickness of the second cathode when made of aluminum must be made thin to provide transparency (column 5, lines 10-12).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the thicknesses of the first cathode and second cathode to make them slightly thinner or thicker, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the cathode layers of Guha so that the first cathode is between 55 and 65 Angstroms to provide transparency while providing the desired

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electrical characteristics and to modify the second cathode to be as thin as 10 to 20 Angstroms to provide a more transparent second cathode.

12. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Guha et al. (5,739,545) in view of Bao et al. (6,252,253).

Guha discloses an OEL having a first cathode of calcium and a second cathode of aluminum forming a transparent cathode.

Guha lacks disclosure of a light-emitting layer formed of a polymeric material.

Bao teaches an OEL device having a dual-layered transparent cathode of calcium and aluminum with an organic light-emitting layer formed of a polymeric material (column 7, lines 17-20). Bao teaches that such polymeric materials are well-known in the art (column 5, lines 5-9).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the OEL of Guha to have a light-emitting layer formed of an organic polymeric material, as taught by Bao, in order to use a well-understood material that provides the desired light emission.

### ***Conclusion***

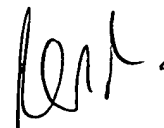
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sharlene Leurig whose telephone number is (571) 272-2455. The examiner can normally be reached on Monday through Friday, 8:30am-5:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

sll  

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